

The Greatest Mystery in the Whole World May Be Solved By Science

ORIGIN OF LIFE MAY BE FOUND TO BE IN ENERGY

Students of the evolution of animal life on the terrestrial globe will be interested to know that in a recent Scientific American appears a most interesting review of a new book—Prof. Henry Fairfield Osborn's latest published work—entitled "The Origin and Evolution of Life."

Thanks to the courtesy of Munn & Co., publishers of the Scientific American, this newspaper is able to reproduce herewith excerpts from the reviewer's article on Prof. Osborn's work, together with one of the illustrations which adorn the book, as published by Charles Scribner's Sons.

"As the author is a thoroughgoing evolutionist," comments the reviewer at the outset, "no arguments are offered for the truth of evolution, now no longer ranked as a theory but admitted as an inevitable natural law." "Discussing the various theories of the probable nature and origin of life, the author finds the vitalistic and supernatural interpretations, on the one hand, and the mechanistic and materialistic interpretations, on the other, to be alike unsatisfying. Believing with Emerson that the laws of nature are the laws of God and are as binding as the Decalogue, he refuses to interpret life as an arbitrary interruption of those laws, a supernatural interposition by an externally creative power, or as caused by an internal perfecting agency other than the known and unknown physicochemical agencies; nor does he admit an explanation of life as merely a question of matter or mechanism.

"Energetic" idea. "In contradistinction to the vitalistic, mechanistic and materialistic schools of thought we might coin a word and describe the concept of life here developed as 'energetic.' The creative power of energy is well known. In physics energy controls matter and form; in physiology function controls the organs; in animal mechanics motion controls and, in a sense, creates the form of muscles and bones.

"In every instance some kind of energy precedes some kind of form, rendering it probable that energy also precedes and controls the evolution of life. It appears reasonable to suppose that when life appeared on the earth some forms of energy pre-existing in the cosmos were brought into relation with the energy properties of the chemical elements also existing.

"It is a matter of pure speculation whether there is a peculiar vital energy or not. In the author's opinion there is probably no peculiar vital energy, because the researches and experiments of Loeb and other biologists have thus far revealed no evidence for it.

"Explaining Life. "The theory is advanced that life may ultimately be explained through the threefold phenomena of action, reaction, and interaction. In the domain of physiology the laws of physics governing action and reaction and the transformation and degradation of energy are known to be of prime importance in effecting that



Here we have a battle scene in the prehistoric ages, a reproduction from "The Origin and Evolution of Life" by Prof. H. F. Osborn.

These lizard-like creatures, called tyrannosauri, are carnivorous mechanisms, interpreted by the author as "offensive energy complex."

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capture of energies so essential to every living organism. "For instance, the heat, light, and chemical energy of the sun are transformed into the chemical potential energy of the compounds of carbon, hydrogen, and oxygen in the plant, transmitted by the animal into motion and heat, and then dissipated. "Thus in the life cycle we observe both the conservation and the degradation of energy, corresponding with the first and second laws of thermodynamics developed in physics by the researches of Newton, Helmholtz, Phillips, Kelvin, and others.

"Although these two great principles that the energy of motion can be converted into an equivalent amount of heat and that a certain amount of heat can be converted into a more limited amount of power were discovered through observations of larger masses of matter, they are believed to apply equally to such motions as those of the smallest electrically charged atoms (ions) and the particles flying off in radiant energy as phosphorescence.

Such movements of infinitesimal particles underlie all the physicochemical laws of action and reaction which have been observed to occur within living beings.

Principle of Interaction. "The most striking feature of the author's concept comes in at this point; namely, that the co-ordination and harmonizing of all the several parts of a living plant or animal is brought about through the evolution of a physicochemical principle termed 'interaction.'

"While actions and reactions, as is well known, refer chiefly to what is going on between parts of an organism which are in chemical or physical contact, interactions refer to what is going on between parts which are connected with each other by other parts, and cannot be analyzed by dynamical principles alone without a knowledge of the connecting structure.

"As stated by M. I. Pupin, action and reaction are chiefly simultaneous, whereas interaction connects actions and reactions which are not simultaneous. To use a simple illustration: When one pulls at the reins the horse feels it a little later than the moment at which the reins are pulled—there is interaction between the hand and the horse's mouth, the reins being the interacting part.

"Again, in interaction the cause may be very feeble, yet the potential or stored energy liberated at a distant point may be tremendous. An interacting nerve-impulse starting from a microscopic cell in the brain may give rise to a powerful muscular action and reaction at some distant point. An interacting chemical impulse may energize or depress whole groups of organs in animals and plants.

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JULIUS KAHN WILL SUPPORT PLAN FOR MILITARY TRAINING

Denouncing pacifists and pro-Germans and calling for their deportation, Congressman Julius Kahn of California today gave his support to universal military training in a letter addressed to Lieut. Gen. S. B. M. Young, U. S. A., retired, head of the National Association for Universal Military Training and commander-in-chief of the Military Order of the Loyal Legion of the United States. The letter made public today reads in part as follows:

"Our country is at war with what I consider to be the most thoroughly trained and equipped military

power that the world has ever seen. We must win the war!

"There must be no half-hearted support of the Government in any quarter. Those who are not with us in this conflict are against us. They should be dealt with so expeditiously and so severely that those who would be inclined to preach and talk sedition and treason will have the fear of God instilled in their hearts, and so be deterred from their treasonable course.

"This is no time to listen to the vapors of pusillanimous pacifists or disloyal pro-Germans. They ought to be promptly deported and sent to their friends in Germany. The entire country will stand behind the President in whatever steps he may take to muzzle effectively and promptly such disloyal reproaches.

Lessons Must Not Be Lost.

"The lessons of this war must not be lost on the American people. A bill for universal training of American youths must be enacted in the coming session of Congress. It is appalling to learn from the records that 60 per cent of our boys are physically unfit for military service. Universal training would materially remedy this condition. Your organization, I hope, will lend all its energies to achieve the successful enactment of such a law. All patriotic citizens should work for it."

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CITY'S YOUNGEST LICENSED AUTO PILOT IS ONLY 11

Washington's youngest automobile driver is just a little more than eleven years old.

He is Clarence E. Geiger, of 1885 Calvert street northwest, son of Frederick C. Geiger, an attorney. Clarence has been driving an automobile since he was nine years old, but it was not until March 17 that he obtained a permit from the District officials.

Master Geiger is proud of his record. In that he was never called down by a traffic policeman nor has he ever figured in an accident. Daily he drives his mother and sister on shopping tours, and every week-end he is at the wheel when the family takes long tours in the surrounding country. He drove his car through the Middle West this summer, and not once on the long trip of three weeks did he relinquish the wheel to any of those who accompanied him.

A Student in Cook School.

He drove through the large cities of the Middle West without accident or without clash with the traffic squad. Clarence, who is a student at the Henry Cook School, in seventeenth street northwest, is in the seventh grade and the envy of his schoolmates. He proudly displays to his playmates his card issued by the District authorities.

Traffic Policeman William J. Creamer, stationed at Eighteenth street and Columbia road, is a great admirer of the young driver. Policeman Creamer, who has been on the traffic squad for eleven years, nine of them at one of the most congested corners in the city—Fourteenth and G streets northwest—says that if every one in Washington, who drives an automobile obeyed traffic instructions as diligently as Clarence, Washington would soon be without motor accidents.

"I have been at Eighteenth street and Columbia road now for two years," said Creamer today, "and in all that time I have never seen a more careful driver than Clarence. When I first was transferred from Fourteenth and G streets to my present post I was surprised to see the boy at the wheel of a motor car, and I was still more astonished at the way in which he observed my signals. It is a pleasure to regulate traffic when such careful drivers are at the wheel."

Needs No Stop-Go Signs.

"Clarence passes my corner half a dozen times a day and I have never

He Drives a Car Like a Veteran



CLARENCE E. GEIGER.

had to 'call' him for the least thing. Since the semaphore has been placed at this corner traffic is much easier to regulate, but if all drivers were as careful as the young boy we could do away with the signs. Several months ago I got the idea that Clarence was driving without a permit and I decided to investigate. I called to him and asked for his driver's license. He didn't hesitate a moment but drew a card out of the pocket on the door of his car and showed it to me. It was made out to Clarence E. Geiger and there was nothing for me to do but wave him on."

Clarence says he is often held up by traffic and bicycle policemen, who demand his card. "When I show it to them, they declare that I am driving on my father's permit, but it does not take me long to convince them that the card was issued to me. Once or twice I have had trouble, but when they investigate they find that the license was issued to me."

MRS. HARRIMAN VISITS BRITISH WOMEN AT WORK

LONDON, Nov. 25.—Mrs. J. Borden Harriman, of New York, started a special tour of British munitions factories today, particularly to see how British women workers were "doing their bit."

U. S. GIRL SLAVE OF GERMAN FIENDS IN DETENTION CAMP

AYER, Mass., Nov. 25.—How an American girl, nineteen years old, was lured into Germany, is held there and forced to suffer all sorts of indignities is told in a letter smuggled through to her brother, now a private in the United States army.

With the consent of the authorities at Camp Devens the letter is made public. The brother is of German descent and came from New Hampshire. Before the war his mother went to Germany on a visit to her parents and has remained there. Six months ago, he says, his sister received an official-looking letter stating her mother was ill and wanted her.

BLOWS FINGERS OFF.

LAUREL, Md., Nov. 25.—Walter Burton, a son of Mr. and Mrs. Walter T. Burton, of Burtonville, placed his gun stock on the ground to take to a farmer and put his hand over muzzle. He lost his right thumb and two fingers.

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WARM Gloves . . \$1.50 to \$5.00 pair

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